

REMARKS

Applicants respectfully request reconsideration of this application, and reconsideration of the Office Action dated April 19, 2005. Upon entry of this Amendment, claims 1-6, 8-11 and 13-23 will remain pending in this application. The amendments to the claims are supported by the specification and original claims. No new matter is incorporated by this Amendment.

Applicants gratefully acknowledge the Examiner's express indication that claims 18 and 20-23 are allowable.

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Claims 1-3, 5, 7, 14, and 16 are rejected under 35 U.S.C. §103(a) as purportedly obvious based on Mitsuda et al. (U.S. Pat. No. 6,327,407) in view of Ozawa (U.S. Pat. No. 5,960,135) or Hauer et al. (U.S. Pat. No. 5,696,862).

Claims 4, 6, 15, and 17 are rejected under 35 U.S.C. §103(a) as purportedly obvious based on Mitsuda et al. in view of Ozawa or Hauer et al., and further in view of Takahashi (U.S. Pat. No. 6,215,917).

Claims 8-11, 13, and 19 are rejected under 35 U.S.C. §103(a) as purportedly obvious based on Mitsuda et al. in view of Ozawa or Hauer et al., and further in view of Okada et al. (U.S. Pat. No. 6,567,590).

These three rejections are addressed together as similar issues apply to all three. Namely, the features of previous claim 12 have been incorporated into independent claims 1 and 2 (from which the remaining claims depend). Thus, since claim 12 was not included in any of the above rejections, these rejections are all overcome. Withdrawal of each rejection is respectfully requested.

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Claim 12 is rejected under 35 U.S.C. §103(a) as purportedly obvious based on Mitsuda et al. in view of Ozawa or Hauer et al., and further in view of Chua et al. (U.S. Pat. No. 5,519,526). Applicants respectfully traverse.

As explained above, claim 12 has been canceled and the features of claim 12 have been incorporated into claims 1 and 2. Thus, Applicants will address this rejection insofar as it may be deemed to apply to amended claims 1 or 2.

Independent claims 1 and 2 (from which the other claims all depend) both concern an optical receiver. The optical receiver of claim 1 includes a substrate, a back-illuminated photodiode (PD) placed on the substrate, a light-transmitting medium, and a wavelength-selecting filter. The light-transmitting medium is placed on the substrate, and receives light, having multiplexed wavelengths, from outside. The wavelength-selecting filter is attached directly at the end face of the light-transmitting medium in such a way that the filter is slanted at an angle of 4 to 12 degrees to the plane perpendicular to the optical axis. The wavelength-selecting filter also selects light having a specified wavelength out of light emerging from the light-transmitting medium, and transmits the selected light to the PD to enable the PD to detect it. The combination of cited patents fails to teach or fairly suggest each and every feature of claim 1.

According to the Applicants, Mitsuda slants the filter to direct light to strike the light-receiving face of the PD. Therefore, Applicants submit that Mitsuda teaches, to those of ordinary skill in the art, an angle of about 45 degrees as the oblique angle. This is because if the angle is less, it would be necessary to place the photo-sensitive area of the PD at a position remote from the filter. When only the suppression of returning reflected light to the light-emitting source is considered, as in the present invention, an angle of 4 to 12 degrees is sufficient. However, Applicants submit such a concept is neither taught nor fairly suggested by Mitsuda, or the other applied patents. Hence, none of the documents teaches or fairly suggests the oblique angle (i.e. 4 to 12 degrees) of the filter as recited in claim 1.

Furthermore, according to Applicants, the relied upon patents fail to teach or suggest Applicants' recited back-illuminated PD. Applicants' structure can be formed simply by wire bonding, without forming a bump. This concept likewise is submitted as neither taught nor fairly suggested by any of the cited documents. For at least these reasons, Applicants respectfully submit that claim 1 is patentable over the applied art.

Applicants now address the optical receiver of claim 2. Claim 2 differs from claim 1 in reciting that the wavelength-selecting filter is placed at the midpoint of the light-transmitting medium. Like claim 1, however, such filter is described as slanted at an angle of 4 to 12 degrees to the plane perpendicular to the optical axis. Also, like claim 1, a back-illuminated PD is recited as on the substrate.

The combined teachings of the cited art fail to teach or fairly suggest each and every feature of claim 2. As discussed above in connection with claim 1, none of the cited art teaches or fairly suggests the claimed oblique angle of the filter (i.e. 4 to 12 degrees). Likewise, the combined teachings also fail to render obvious Applicants' recited back-illuminated PD. For at least these reasons, claim 2 is submitted as patentable over the asserted combined patents.

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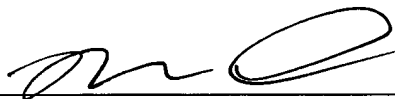
Applicants respectfully submit that this Amendment and the above remarks obviate the outstanding rejections in this case, thereby placing the application in condition for immediate allowance. Allowance of this application is earnestly solicited.

If any fees under 37 C.F.R. §§1.16 or 1.17 are due in connection with this filing, please charge the fees to Deposit Account No. 02-4300; Order No. 033035.083.

If an extension of time under 37 C.F.R. §1.136 is necessary that is not accounted for herewith, such an extension is requested. The extension fee should be charged to Deposit Account No. 02-4300; Order No. 033035.083.

Respectfully submitted,
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